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CLAIMS

1. A cooking vessel (1) for cooking food under pressure, said vessel comprising:

· a cooking bowl (2) and a lid (3), said bowl (2) being provided with engagement means (12) suitable for co-operating with locking means (5) that extend substantially radially over the lid (3) and that are suitable for being moved for locking/unlocking the lid (3) on the bowl (2); and

· support means (11) disposed between the lid (3) and the locking means (5) so that, when the lid (3) is locked on the bowl, the locking means (5) come to bear against the support means (11);

said cooking vessel being characterized in that:

· firstly, the lid (3) and the bowl (2) are shaped so that, when the lid is placed onto the bowl (2), the lid (3) penetrates significantly into the bowl (2) so as to form an "internal-mount" lid, until the locking means (5) come to bear against the engagement means (12) which thus form abutment means for the lid (3); and

· secondly, the support means (11) subdivide the lid (3) into one or more fixed angular sectors (3F) that are held by the locking means (5), and one or more free angular sectors (3L) that are not held by the locking means (5), said support means (11) and the lid (3) being dimensioned in a manner such as to enable the free sector(s) (3L) of the lid (3) to be deformed in controlled manner under the effect of the pressure prevailing in the bowl (2).

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2. A vessel according to claim 1, characterized in that the bowl-covering portion (8) of the lid (3) defines an outer edge (9), and the bowl (2) is provided with a rim (4) that has a top limit (4S), the support means (11) being dimensioned so that, when the lid (3) is locked on the bowl (2) and when the vessel is not under pressure, they generate a first predetermined amount of vertical

clearance (D1) between said top limit (4S) and that portion of the outer edge (9) which defines the free sector(s) (3L), and, when said lid is locked on the bowl and when the vessel is under pressure, they generate a
5 second amount of vertical clearance (D2) between said top limit and said portion of the outer edge (9), the difference between the first amount of clearance (D1) and the second amount of clearance (D2) resulting from the free sector(s) (3L) deforming under the effect of the
10 pressure prevailing in the bowl.

3. A vessel according to claim 2, characterized in that the support means (11) and the lid (3) are dimensioned so that, when the vessel (1) is subjected to a rated
15 pressure, the second amount of clearance (D2) is substantially zero in those zones of the free sector(s) (3L) which undergo the largest amount of deformation, the outer edge (9) then coming substantially flush with the top limit (4S) of the rim (4) of the bowl (2).

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4. A vessel according to any one of claims 1 to 3, characterized in that the support means (11) are formed by bearing ramps (15).

25 5. A vessel according to claim 4, characterized in that the bearing ramps (15) are formed by projections (16) provided on the lid (3), substantially vertically in register with the locking means (5).

30 6. A vessel according to claim 4, characterized in that the bearing ramps (15) are formed by separated parts, e.g. parts that are welded or otherwise bonded to the lid (3).

35 7. A vessel according to any one of claims 1 to 6, characterized in that the locking means (5) are formed by two jaws (6, 7) that are substantially symmetrical to

each other about the center of the lid, said jaws (6, 7) extending substantially radially.

8. A vessel according to claim 2 or claim 7,
5 characterized in that the engagement means (12) are formed by the portion(s) of the rim (4) of the bowl (2) that is/are situated substantially vertically in register with the jaws (6, 7), the jaws coming to bear against the rim (4) in order to lock the lid (3).

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9. A vessel according to any one of claims 4 to 6 and to claim 8, characterized in that the support means (11) are formed by two pairs of bearing ramps (15), each pair of bearing ramps (15) being situated under a corresponding
15 jaw (6, 7).

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10. A vessel according to claim 9, characterized in that the two pairs of bearing ramps (15) are positioned on the same geometrical circle (C).

11. A vessel according to any one of claims 1 to 6, characterized in that the locking means (5) are formed by a locking bar that is suitable for co-operating with corresponding lugs mounted on the bowl (2), said lugs
25 forming engagement means (12) for engaging the locking means (5).

12. A vessel according to claim 2 and to any one of claims 3 to 11, characterized in that the bowl-covering
30 portion (8) of the lid (3) is extended by a side wall (10) that extends downwards so as to fit the shape of the inside wall (2I) of the bowl with a small amount of radial clearance (R).

35 13. A vessel according to claim 12, characterized in that the bottom end of the side wall (10) of the lid (3) has a fold (30) arranged to receive a sealing gasket (40).

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14. A vessel according to claim 2, characterized in that
the rim (4) of the bowl (2) has an annular top margin (T)
presenting substantially the same external curvature as
5 the lid (3).

15. A lid (3) designed to be used in a vessel (1)
according to any one of claims 1 to 14.